

Application No.: 09/853217

Case No.: 55944US002

Amendments to the Claims:

The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) A polymerization method comprising:
 - a. providing a substrate;
 - b. coating at least a portion of said substrate with a polymerizable composition;
 - c. providing an electron beam that is capable of producing pulses of accelerated electrons; and
 - d. irradiating said polymerizable composition with said pulses of accelerated electrons thereby heterogeneously polymerizing to polymerize said polymerizable composition in a single phase, said pulses of accelerated electrons having a dose per pulse of about 10 to about 90 Gy, wherein said composition is irradiated with said pulses of accelerated electrons at a pulse rate equal to or greater than about 500 pulses per second.
2. (original) The method of claim 1, wherein said polymerizable composition comprises at least one polymerizable monomer, at least one oligomer, or a blend thereof.
3. (original) The method of claim 2, wherein said at least one polymerizable monomer comprises a C₈₋₁₃ alkyl acrylate monomer.
4. (previously presented) The method of claim 3, wherein said C₈₋₁₃ alkyl acrylate is selected from the group consisting of isooctyl acrylate, 2-ethylhexyl acrylate, lauryl acrylate and tridecyl acrylate.
5. (original) The method of claim 2, wherein said at least one polymerizable monomer is selected from the group consisting of methyl methacrylate, isobornyl acrylate, tripropyleneglycol diacrylate, pentaerythritol triacrylate, pentaerythritol tetraacrylate,

Application No.: 09/853217

Case No.: 55944US002

hydantoin hexacrylate, and trimethylolpropylenetriacrylate.

6. (original) The method of claim 2, wherein said polymerizable composition further comprises at least one comonomer.
7. (original) The method of claim 6, wherein said at least one comonomer is selected from the group consisting of acrylic acid, isobornyl acrylate, octylacrylamide and n-vinyl pyrrolidone.
8. (original) The method of claim 2, wherein said polymerizable composition further comprises a crosslinking agent.
9. (original) The method of claim 2, wherein said polymerizable composition further comprises a thickener.
10. (original) The method of claim 1, wherein said polymerizable composition is irradiated with pulses of accelerated electrons during a residence time of about 1.5 seconds to about 5 seconds.
11. (previously presented) The method of claim 1, wherein said polymerizable composition is irradiated with said pulses of accelerated electrons having a dose per pulse of about 10 to about 40 Gy.
12. (previously presented) The method of claim 1, wherein said polymerizable composition is irradiated with said pulses of accelerated electrons at a pulse rate of about 500 to about 3,000 pulses per second.
13. (previously presented) The method of claim 12, wherein said polymerizable composition is irradiated with said pulses of accelerated electrons having a dose per pulse of about 10 to about 30 Gy.

Application No.: 09/853217

Case No.: 55944US002

14. (original) The method of claim 1, wherein the polymerizable composition is irradiated with said pulses of accelerated electrons at a temperature below 20°C.
15. (original) The method of claim 1, wherein said polymerizable composition is irradiated with said pulses of accelerated electrons at a temperature below 20°C for about the first 40% to 70% of the time period that said polymerizable composition is irradiated.
16. (canceled)
17. (canceled).
18. (withdrawn) A polymerization method comprising:
- a. providing a substrate;
 - b. coating at least a portion of said substrate with a polymerizable composition;
 - c. providing an electron beam that is capable of producing pulses of accelerated electrons;
 - d. irradiating said polymerizable composition with said pulses of accelerated electrons to partially polymerize said polymerizable composition;
 - e. providing an electron beam that is capable of producing a continuous beam of accelerated electrons; and
 - f. irradiating said partially polymerized polymerizable composition with said continuous beam of accelerated electrons to further polymerize said partially polymerized polymerizable composition.
19. (withdrawn) A method for polymerizing a pressure-sensitive adhesive article comprising:
- a. providing a substrate;
 - b. coating at least a portion of said substrate with a polymerizable composition;

Application No.: 09/853217

Case No.: 55944US002

- c. providing an electron beam that is capable of producing pulses of accelerated electrons; and
 - d. irradiating said polymerizable composition with said pulses of accelerated electrons at a temperature below 20°C to polymerize said polymerizable composition of said pressure-sensitive adhesive article.
20. (withdrawn) A pressure-sensitive adhesive article made by the method of claim 19, wherein said pressure-sensitive adhesive article has a conversion of greater than 90 wt%.
21. (withdrawn) A pressure-sensitive adhesive article made by the method of claim 19, wherein said pressure-sensitive adhesive has a shear adhesion time of greater than 300 minutes.
22. (withdrawn) A pressure-sensitive adhesive article made by the method of claim 19, wherein said pressure-sensitive adhesive has a peel adhesion to glass of greater than 25 N/dm.